



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

09/778,474

02/07/2001

G. Rodney Nelson

2479.1067-001

4700

24374 7590 03/17/2008

VOLPE AND KOENIG, P.C.  
DEPT. ICC  
UNITED PLAZA, SUITE 1600  
30 SOUTH 17TH STREET  
PHILADELPHIA, PA 19103

EXAMINER

TSEGAYE, SABA

ART UNIT

PAPER NUMBER

2619

MAIL DATE

DELIVERY MODE

03/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



**DETAILED ACTION**

***Response to Amendment***

1. The indicated allowability of claims 1-5, 7, 8 and 10-19 are withdrawn in view of the newly discovered reference(s) to Dunn (US 3,742,498) and Hewitt et al. (US 4,642,806)

Rejections based on the newly cited reference(s) follow.

2. Claims 1-5, 7, 8 and 10-19 are pending. Currently no claims are in condition for allowance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Line 5, it is not clear whether the phrase “a feedback message” refers to the same feedback message cited in claim 1.

***Claim Rejections - 35 USC § 103***

5. Claims 1-4, 7, 8, 14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn (US 3,742,498) in view of Hewitt et al. (US 4,642,806).

Regarding claim 1, Dunn discloses a communication between a master station and a slave station in different time slots of a TDM format. The slave station propagates a pseudo noise code

Art Unit: 2619

(a marker) ranging signal to the master station. The phase information of this ranging signal is detected in the master station, coded (analyzed), and transmitted to the slave station. This phase information is respond to the slave station **to adjust** the phase of its timing signals so that data bursts of the slave station appear in the proper time slot of the TDM format (column 4, lines 21-45; column 13, lines 7-25).

Dunn does not expressly disclose two communication channels to support messages to/from a base station.

Hewitt teaches a communications system between outstations and a node. The system uses two communication channels both of which are used in a time share mode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two communication channels, such as suggested by Hewitt, in the system of Dunn in order to provide a simultaneous communications in both directions between the master station and the slave station.

Regarding claim 2, Dunn discloses that time slot is divided into tow subintervals; one for sync and slow speed data and one for high speed data; for example, 10 microseconds are allotted for voice data transmission and 1 microsecond for sync maintenance.

Regarding claim 3, Dunn discloses that time slot is divided into tow subintervals; one for sync and slow speed data and one for high speed data; for example, 10 microseconds are allotted for voice data transmission and 1 microsecond for sync maintenance (column 8, lines 33-44).

Regarding claim 4, Dunn discloses that each aircraft (field unit) continuously uses its particular time slot (1 microsecond) for sync maintenance.

Regarding claim 8, Dunn discloses a method further comprising dividing the first and second channel into a predetermined number of time slots to support periodic communications between the base station and a plurality of field units (column 8, lines 24-27).

Regarding claims 7 and 17, Dunn discloses each of the slave station transmits a different pseudo noise code ranging code signal to the master station (column 5, lines 51-52; column 6, lines 5-13).

Regarding claim 18, Dunn discloses wherein an assigned short PN code indicates a request by the field unit to transmit a data payload to the base station (column 8, lines 30-44).

Regarding claim 19, Dunn discloses wherein an assigned short PH code indicates a request by the field unit to remain in a standby mode (column 8, lines 30-39).

Regarding claim 14, Hewitt discloses wherein time slots are assigned in the first and second channel based on a predetermined offset (see fig. 2).

6. Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn in view of Jalali et al. (US 5,828,662).

Regarding claim 1, Dunn discloses a communication between a master station and a slave station in different time slots of a TDM format. The slave station propagates a pseudo noise code (a marker) ranging signal to the master station. The phase information of this ranging signal is detected in the master station, coded (analyzed), and transmitted to the slave station. This phase information is respond to the slave station **to adjust** the phase of its timing signals so that data bursts of the slave station appear in the proper time slot of the TDM format (column 4, lines 21-45; column 13, lines 7-25).

Dunn does not expressly disclose two communication channels to support messages to/from a base station.

Jalali teaches a communication system between base station and a mobile station using a forward channel and a reverse channel.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use two communication channels, such as that suggested by Jalali, in the system of Dunn in order to provide a simultaneous communications in both directions between the two points.

Regarding claim 12, Jalali discloses the method wherein field units are notified of time slot assignments based upon messages over a forward link-paging channel (see fig. 1, step 107; column 5, lines 4-10).

Art Unit: 2619

7. Claims 5, 10, 11, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn in view of Hewitt as applied to claim 1 above, and further in view of Scott (US 6,388,997).

Regarding claims 5, 11, 13 and 15, Dunn in view of Hewitt discloses all the claim limitations as stated above, except for the feedback message is to advance or retard timing.

Scot teaches that the base station sends a timing adjustment command to the user station instructing the user station to advance or retard its timing according to the calculated distance, so as to minimize guard times between time slots. Further, Scot teaches that a timing adjustment command may be expressed in terms of a number of bits of chips.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dunn's feedback message for instructing the slave station to advance or retard its timing, as taught by Scott, in order to minimize guard times between time slots and the data from the slave station appear in the proper time slot.

Regarding claim 10, Scot teaches the method wherein the timing adjustment information is transmitted to a field unit over a paging channel (column 55, lines 35-50).

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn in view of Hewitt as applied to claim 1 above, and further in view of Park et al (US 6,396,823).

Dunn in view of Hewitt discloses all the claim limitations as stated above except for the transmissions on the first channel are encoded using BCH.

Park discloses a base station transceiver in a CDMA system that utilizes BCH encoding (the invention provides a base station for scrambling Bose-Chaudhuri- Hocquenghem BCH encoded data; see col. 3 lines 22-30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Dunn's master station to transmit BCH encoded data in the forward link direction, as taught by Park. The motivation is to provide a fast, accurate, and efficient system. It is known in the art that BCH encoding is an accurate and efficient method that enables the subscriber on the receiving end to detect and correct errors.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-5, 7, 8 and 10-19 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SABA TSEGAYE whose telephone number is (571)272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Saba Tsegaye  
Examiner  
Art Unit 2619

/S. T./  
March 7, 2008

/Wing F Chan/  
Supervisory Patent Examiner, Art Unit 2619  
3/10/08